

CROPS AND AGRICULTURE IN JAZIRAH

I. Dry Farming

Dry farming is by far the most important activity of Jazirah. The first tractor and combine were introduced in 1936 by Shahine Bey Mauf of Zahleh. Before that time agriculture was the business of the peasants. The town inhabitants of Jazirah took no interest in it. The area cultivated was restricted to a few kilometers south of the railway line in what is called the Old Villages. The political troubles in 1936-37 and the low prices of wheat and barley before the War did not encourage capitalists inside Syria to invest their money in Jazirah. Furthermore, agricultural machinery was new to most people who did not understand its economics or how to run it.

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a. Expansion in the Use of Machinery 1936-1952

The War doubled the price of wheat in its second year. The crop of 1940 was sold for LS 50-55 a ton at Aleppo. The French bought it for LS 120 in 1941. The Office des Cereales Panifiables (O. C. P.) fixed the price at LS 350 in 1943. During these years the dollar was available at the official rate of LS 2.20 and importation of machinery from the U. S. was possible. The number of tractors increased to about 60 in the winter of 1943.

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The crop of 1943 was exceptionally good and the O. C. P. imported some 50 tractors and a similar number of combines which reached Jazirah during the harvest season. The machines were first rented to the farmers and then sold to them. They represented the first large-scale importation of machinery to Jazirah.

Importation of machinery in the following two years became difficult as a result both of limited availability and of dollar shortage. But by the end of the War dollars became again available at the official rate and large numbers of tractors were imported in 1945 and 1946. The importation of agricultural machinery has become a steady and continuous flow in spite of the sharp rise in the dollar rates and the price of wheat, though below 1943, still makes large-scale exploitation profitable. Recently the Government through the Agricultural Bank has helped the farmers import and buy on

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407 Installments some 200 tractors of which the share for Jazirah was 71.
439 This brings the number of tractors and combines to about 400 and 300,
[654] respectively.
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It appears that the present number of tractors and combines fulfills the demands of the Jazirah if no new region such as the Rad is opened for cultivation. This is demonstrated by the fall in the rent of agricultural machinery, for whereas rent of the combine cost 33% of the crop in 1936 and between 22-25% from 1940 to 1948, the charge dropped to less than 20% in 1949 and 1950 and to 15% in 1952. This last share leaves a moderate and reasonable profit to the combine owner and it will not be possible for him to reduce prices greatly.

The same is true of tractor rents. The average charge for disc plowing a dunum at present is LS . 90-1. 10 in the region of Qamishli. This is a competitive charge and cannot be much reduced.

Therefore, the conclusion is that the number of agricultural machines in Jazirah is likely to remain stable with importation every year to replace those machines which become obsolete.

b. Expansion in the Area Cultivated

311 The first regions to be tilled by tractors in Jazirah were Qamishli, Amuda and Dirbassiya. When no more lands were available around them farmers after 1946 went east to Tal Koshak on the border of Iraq.

After 1949 all the region from Tal Koshak to Dirbassiya became cultivated and farmers had to move to less productive areas around the Rad, south of Tel Brak, and in Ras el Rin. At the present time, taking Tal Koshak on the east and 30 kilometers west of Dirbassiya as the western boundary and south to the Rad and to Hassakeh, there is not a single patch uncultivated on a two year basis. In the first two years the region between Ras el Ain and Rakka was opened for cultivation by Asfar and Najjar family. This year the first crop grown on lands midway between the two towns appeared. The yield of barley was 5 to 6 times the amount planted. Around Qamishli the barley yield was 10 to 12.

311 The region of Deirik and Ain Divar or Jasiratibn Amr was long
491 neglected despite its fertility because of impossible communications. No roads existed and the abundant rainfall stopped all transport for six months of the year. Within the last two years the Government

185 strains or to cultivate them in the Government stations in Syria.
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425 3. The price of fuel is a major obstacle to agriculture and to
651 the possibility of competing on the world market. While the price
185 of a ton of mazut in the Euphrates area in Iraq is LS 21 its price in
654 Kamishli is LS 175, i. e., more than eight times as much. The same
is true to a lesser degree of the price of gasoline and kerosene due to
excessive Government taxation. The Government used to refund to
farmers a part of the taxes on gasoline and kerosene used in agricultural
machinery, but it has recently abolished even this meager help.

407 4. The sale of agricultural machinery and especially of its
425 spare parts needs supervision. Agents deliberately create scarcities
during the period of greatest need so as to get the highest prices possible.

425 5. The system of transport from the combine to the stations
489 needs complete revision. At the present time, farmers are obliged
to use jute bags on the combines to fill with wheat. The bag is
bought for LS 2 but is sold as wheat in Aleppo. Since the bag weighs
1.25 kilograms and the price of a kilogram of wheat is 26 piasters,
the farmer gets less than 30 piasters for every 200 he invests in a bag.
This means a loss of LS 14 per ton, without counting all the extra
expense of handling on the combine, then on to the truck, then to the
railway station, then on the railway and, lastly, discharging at Aleppo
Station, then transporting by truck to the merchant's store. All this
handling, necessitated by the use of jute bags is paid by the farmer to
the amount of LS 4 per ton. Added to the loss on the bag it makes a total
loss of LS 15. All this could be saved if transport could be so organized
as to eliminate the need for jute bags.

425 6. The fluctuation and uncertainty of prices is a major obstacle
656 to the continued progress of agriculture in Jazirah. The farmer who
plants his seeds in October does not know whether he will sell his
crop in July for ten piasters a kilo or for thirty. He lacks information
on world prices and merchants take advantage of that and of the fact
that he is constantly in need of money to buy a major share of the
crop at low prices. But even if the farmer were informed about world
markets, Government regulations constantly hamper the free opera-

job. It is this mechanized farmer-investor who has produced the surplus wheat exportable from Jazirah. Any attempt to reduce his activity by limiting the area of land cultivated by him, or by artificially reducing the prices of his crops for the benefit of the State monopoly, or by ignoring his demands for low production costs, will result in his leaving the job for other occupations. It should be noted also that this type of farmer is in most cases not tied to the land. He usually rents the land he cultivates, and even if he owned land, it is only a small fraction of the area he plants annually. It is always easy for him to rent his lands to peasant farmers and go back to the city. 241

3. Estimate of a Capitalist Agricultural Enterprise and the Area it needs: A complete outfit of agricultural machinery belonging to a farmer in Jazirah usually consists of the following. A fifty horsepower tractor, a disc plow, a cultivator, a drill, a combine either tractor drawn or self-propelled, a jeep, a truck, and a regular repair shop for immediate repairs in the field. He will have a mechanic and two drivers on an annual basis. The number will rise to about ten during the plowing, seeding, and harvest seasons. This means an outlay of LS 100,000 in capital to which is added LS 25,000 for the price of seed, fuel, and miscellaneous expenses. To meet the depreciation on the machinery, cover the annual expenses and interest, and earn a profit, the farmer must plant as large an area of land as his equipment can handle. It is found that he has to plant some 5,000 dunums annually or better still 6,000 in order to find his occupation remunerative. To do this, he has to own or rent land double this area since all cultivation in Jazirah is on a two year rotation basis. 467 454 241

II. Irrigated Agriculture

The Encyclopedia Britannica relates that the region of Nisibin, i. e. Qamishli, was up to the eleventh century planted with fruit trees and that it lost its orchards due to forcible conversion to wheat imposed by the Caliph, as well as ravages by the Bedouin tribes. 241

Implements and Machinery

In Syria there is an enormous gulf between the employment of modern tractors and combines in certain areas and the use of the traditional peasant plow or *feddan* and hand-harvesting and threshing methods elsewhere. The tractor can undoubtedly do a far better job of cultivation. It breaks the hard soil pan so as to facilitate deeper penetration of roots and moisture, and it promotes seed germination by more effective pulverization of the soil. It is equally obvious that combines produce a cleaner grain with less waste than the traditional process of having animals trample the grain and winnowing the resulting product by hand.

The development of Syria's agriculture, however, hardly depends on the rapid expansion of mechanized farming. The use of mechanized equipment can be recommended only where labor is relatively scarce or where units of exploitation are large, as is the case in the Jezireh. Small farmers cannot afford costly, modern machinery. Cooperative ownership and operation of such machinery may ultimately be undertaken, and the mission does suggest, as indicated previously, that an experiment along this line be carried out. It can hardly be expected, however, that this type of cooperative, which is among the most difficult to manage, will spread rapidly in the future.

Far more important and urgent is the task of improving and supplementing the poor implements which the peasants now have at their disposal. They should not have to rely almost wholly on the *feddan* which barely scratches the soil and leaves perennial weeds to compete with crops for the limited supply of soil nutrients. The farmer should have a better plow, supplemented by a cultivator or spike-tooth harrow; a simple seed drill that might permit him to get better yields by sowing in rows instead of by broadcasting; pedal threshing equipment and a hand-operated winnower that would enable him to produce a cleaner grain with less effort; and a simple leveller that would help him to level his land and avoid waste of rain or irrigation water.

Programs to improve and develop implements for the small farmer have been successfully initiated in a number of countries such as India and Afghanistan. The mission strongly recommends that such a program be undertaken promptly in Syria. It would propose establishment of a small implement center in cooperation with the FAO or other technical assistance agencies. This center should be equipped with a shop in which

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407 prototypes of useful implements would be made. These prototypes should then be distributed for supervised testing among selected farmers and arrangements would have to be made for the production of those found successful. Such a program need not be expensive. The mission estimates the capital cost at about £S 150,000 and recurring annual expenditures at not more than £S 100,000.

The problems of mechanized cultivation should not, of course, be neglected. Already an estimated total of 750,000 hectares is tilled by mechanical means. Over 1,300 tractors and 500 combines are being used today, primarily in the Jezireh but also, increasingly, around Aleppo. Mechanical farming is handicapped, however, by the high cost of fuel; lack of sufficient skilled labor to operate, maintain and repair machinery; inadequate repair facilities; excessive cost and, sometimes, deficient supplies of spare parts; insufficient knowledge of the suitability and capability of different types of equipment; and the utilization of too many kinds of machinery. Standards of maintenance are extremely low and repairs much too costly. The abuse of machinery greatly shortens its life. In the Jezireh, major repair facilities exist only in Kamichliye, and only two dealers have their own service stations. All these factors make mechanical farming excessively expensive. In the last two years, profits have seriously diminished as cereal prices declined and costs remained fixed. A reduction of costs is particularly necessary since the mechanically operated farms now contribute the bulk of Syria's exports of cereals.

Better transport facilities will do more than anything else to lower fuel costs. To deal with the other cost factors, a number of measures can be recommended. First of all, machinery dealers should be allowed to operate only if they abide by defined limitations on the price mark-up on machinery and spare parts; maintain prescribed minimum supplies of spare parts; and undertake to operate service and repair facilities in such centers as Kamichliye and Aleppo. Certain reputable dealers have declared to the mission their willingness to adhere to such qualifications, which have proved useful also in other countries. Secondly, the mission urges that short-term courses in the selection, operation and maintenance of farm machinery be organized at Kamichliye and Aleppo. Such courses should be conducted in the agricultural "dead season" and separately for owners and operators. The first should be instructed in the performance and capability of different types of equipment, in the supervision of operation and maintenance, and in the simple economics of mechanical farming; and

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the latter should be taught elementary principles of repair and maintenance. The courses for field operators and mechanics might well include some in-service training in repair shops. The cooperation of reputable dealers in organizing such courses should be enlisted. Finally, the mission proposes the establishment of a secondary agricultural school in Kamichliye to specialize in problems of agricultural engineering. Facilities for instruction in this subject should also be provided at the existing school in Aleppo. The mission envisages an expenditure of £S 2 million for such school facilities. The short-term courses could probably be made self-supporting. To initiate and help carry out this program, the mission suggests that the government obtain the services of one or two machinery experts through the FAO.

Cereals

Aside from the measures outlined above, programs to raise the yield of certain crops must be undertaken. For cereals the development of higher yielding and more disease-resistant strains is of paramount importance. Although many varieties of wheat and barley are grown in Syria, little is known about their comparative worth. A large number of the more promising foreign wheat and barley strains have recently been imported for testing, but the funds, staff and facilities for an adequate testing program are largely lacking. The mission accordingly recommends that the Ministry of Agriculture be enabled to carry out a program for testing, selecting and propagating high-yielding and disease-resistant seed.¹² Since the shortage of trained Syrians may continue for some time, it is likely that the program will have to be handled by a foreign staff (FAO; the French Technical Assistance Mission in Syria). The staff should include a director in charge of planning, three plant breeders and a plant pathologist. They should be assisted by a staff of about 30 Syrians who will largely have to be trained for this purpose. The mission estimates the cost of such a program at about £S 4.5 million over the next five or six years.

For wheat and barley the aim should be to develop good varieties which mature early and can therefore be harvested before the extreme heat. For rice, which will undoubtedly be cultivated in larger volume as the irrigated area expands, the aim should rather be to develop slow-

¹² See Annex C, p. 304, for year-by-year recommendations.

APPENDIX

TABLE 4 Agricultural Machines, 1953

District	Tractors	Fertilizer spreaders	Harvesters		Combines		Threshers		Insecticide sprayers		Dusters	
			Animal- drawn	Tractor- drawn	Self- propelled	Tractor- drawn	Manual	Mechan- ical	Manual	Mechan- ical	Manual	Mechan- ical
Damascus	63	1	5	0	3	1	897	3	91	10	98	—
Homs	65	0	0	0	1	4	15	0	70	1	200	12
Hama	65*	0	0	2	5	0	0	0	1,500	22	265	—
Dera'a	26	5	0	1	0	2	12,003	0	10	1	210	—
Deir es Zor	166	0	0	20	4	74	0	0	70	—	—	—
Hama	540	0	20	72	420	0	—	0	22	40	0	—
Aleppo	352	0	0	10	49	10	2,002	0	21	5	92	10
Latakia	53	0	2	0	0	4	21,000	0	51	5	91	6
Souaida	1	0	0	0	0	0	100	1	200	0	200	—
Total	1,331	6	27	105	482	95	36,017	4	2,035	84	1,156	28

* Estimate.

Source: Ministry of Agriculture and other sources.

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511 their animals. Malaria is prevalent. The majority are heavily
 [164] indebted. The tenants on the irrigated land, with an average
 holding of 18 acres, are also poor but less heavily indebted, be-
 cause they can depend on a more regular income.

484 The poorest class are the landless labourers whose income in
 464 money and kind amounts to 530 Syrian pounds a year (1944)
 (£10 at 1939 prices).¹ This is a starvation wage, which means
 262 that they can only eat enough in harvest time, and in winter must
 subsist on maize, bread, and grass.

311 The poverty on this estate is therefore a result of the low
 productivity and the low proportion of the area under cultiva-
 241 tion. One way of increasing the area cultivated would be by
 the use of machinery. Tractors were introduced some fifteen
 • 409 years ago, but proved too costly in relation to the low prices of
 Syrian grain; owing to lack of skilled drivers and proper main-
 tenance they fell into disrepair. During the late war, however, as
 the price of grain rose, tractors were again used by some tenants
 who hired them from neighbouring estates.

312 Another way of raising production would be to increase irri-
 gation since there is sufficient water to supply much more land.
 In this respect the estate is typical of the whole Homs-Hama
 plain, where much of the water which the French authorities
 have made available by irrigation goes to waste.

311 On this estate, therefore, the poverty of the cultivators is due
 871 to the landowner's failure to increase the productivity of the
 744 soil, rather than to his exploitation of the peasants; compared
 with other estates, this one is socially progressive, since the
 landowner's family have set up a school and also distribute
 medicines free of charge.

312 The second study covers a more intensively cultivated village,
 Ashrafie, on the borders of the irrigated district of Damascus.
 471 Less heavily supplied with water than El Ghuta itself, Ashrafie
 421 has sufficient water to irrigate 10 per cent of the total land. The
 total area is 1,600 hectares or 4,000 acres, of which 2,400 are
 owned by four estate owners and the rest by peasants. The
 largest landowner is an absentee, letting his land on a 50 per cent
 share-tenancy basis; with definite three-year leases (by contrast
 with the usual custom under which the tenant has no lease).

¹ This is calculated on a rate of 9 Syrian pounds to £1, allowing for a six-fold
 increase in the Syrian cost of living between 1939 and 1944.

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511 Within this belt there is a large area of cultivable land still
233 uncultivated, mainly for reasons of shortage of labour, lack of
means of communication, and political insecurity. Unculti-
vated land is generally used for grazing, and in the 'Duck's Bill'
the grass grows high enough for hay cutting. At present the cul-
tivated area is some 481,500 hectares (1,188,000 acres), and it
is estimated that an area about as large again remains uncul-
tivated.

162 The population at present numbers 111,300, of which half
423 are Kurds. Owing to its remoteness and unsettled state, there
has been no survey and settlement of land title. New land is
taken under cultivation under the old Ottoman right by
which ownership is acquired if cultivation can be proved for
ten consecutive years.

471 In the Jezira most of the land is held by large cultivators.
312 In the Euphrates province much of the land has until recently
425 been owned by the villagers, but now the land is passing into
the hands of city landowners as pump irrigation is introduced
(as in Iraq). The pumps and buckets are supplied against pay-
ment in kind by the town merchant or moneyed class; wherever
irrigation brings more lands under cultivation, the ownership
of the extra land is divided equally between the villagers and
the suppliers of water.

427 The system of tenure is the usual share-tenancy; in the
464 Jezira, according to local custom, the landlord takes one-eighth
of the crop to pay taxes, and the remainder is shared equally
between landlord and cultivator, the proportion being deter-
mined by the supply of labour. With the introduction of
● [107] machinery—there were about thirty tractors in the area in 1942
the division into employer and labourers has developed: the
landowner using the tractor on the land and employing wage
labour.

464 Owing to the scarcity of labour, the position of the agricul-
511 tural labourer in the Jezira area is better than in the rest of
164 Syria. Health conditions, however, are bad: the Kurds suffer
146 from trachoma and villagers in the Kamichlia district from
malaria. In the Euphrates region, the position is worse: the
agricultural labourer is weak and underfed, living a hand to
mouth existence and exploited by all.

000 Both in the Jezira and in the Euphrates region there is scope

COTTON IN SYRIA

Another significant aspect of the land tenure problem is the financial arrangements between the landlords and tenants.

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Although there are many variations throughout the country, there are three basic contracts.

In the first, where water is available by gravity flow for irrigation and the landowner furnishes only the land, he gets 50 per cent and the tenant gets 50 per cent of the gross yield. In the second type of contract, where the tenant installs pumps and operates them at his own expense and the landlord furnishes the land only, he gets 33 1/3 per cent and the tenant gets the rest. In the third case, where the landowner furnishes only the land and the tenant drills artesian wells at his own expense, the landowner gets only 25 per cent of the gross yields. There are variations depending on the crops produced and on who furnishes seed, fertilizer, and equipment. With the growth of mechanization, there is a rising tendency for landowners to prepare the seed beds themselves with large tractors and to take a large share of the produce.

With the advent of mechanization, there is also a noticeable tendency to wage-crop arrangements, particularly in the remote areas like the Jezira where the population is sparse and where the only feasible arrangement for picking cotton is the employment of nomads by the day.

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The greatest concentration of small cultivators who own and operate their own farms is in the older farming areas in the southern part of Syria around Damascus. Around Aleppo the farms are larger in size and owner-operators are fewer in number.

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MECHANIZATION

Mechanization is changing rapidly the primitive practices which still dominate Syrian agriculture. The number of tractors has increased from 200 to almost 2,000 and more than 700 combines are in operation.

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Most of the mechanical equipment is in the Jezira and the agricultural areas around Aleppo. Approximately half the tractors are being used in cotton areas.

To encourage further mechanization the government plans to extend loans to farmers on a five-year basis to finance the purchase of agricultural equipment. So far most of the equipment has been bought privately and for cash.

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The first few years have been difficult for the tractor farmers because of the lack of trained operators and the lack of adequate repair facilities, especially spare parts. Now the large manufacturers' agents are establishing modern service stations, repair stations, and mobile repair units. Consideration is even being given to organizing operator training programs.

RESEARCH AND EDUCATION

All of the agricultural missions stress the need for improvement in basic research and educational programs. The United States-Syria Agricultural Mission has outlined a complete program for agricultural training, research, and extension. Some of the recommendations already have been adopted, such as the establishment of a separate Department of Agriculture. Agricultural

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COTTON IN THE MIDDLE EAST

248 yields. The local experiment stations are doing a limited amount of work in
242 variety selections and testing but have not been able to distribute any large
quantity of certified seed. Most of the seed planted is imported directly from
United States breeders or seed distributors.

CULTURAL PRACTICES

248 A high percentage of the cotton land is now prepared with mechanical
[407] equipment, although a few primitive ploughs are still found. Some cotton
is broadcast but for the most part it is planted in ridges. Planting is largely a
hand operation in which the farmer digs a hole with a small hand tool and
drops in five to seven seeds which have been soaked overnight to soften the
shell and increase germination. The rows usually run east and west with the
cotton planted on the south side for greater protection. Cultivation is almost
entirely by hand with short-handle hoes or knives. Picking, as everywhere,
is a family affair. Outside labor usually is required, especially on the large
farms, to weed and harvest the crop.

Irrigation practices vary considerably. In general, farmers try to use as
much water as they can. The use of commercial fertilizers, although in-
creasing, is limited. Whenever possible manure mixed with soil is added to
the cotton land.

On the Near East Foundation experimental farm, yields of 800 pounds
of lint per acre were obtained by applying 30 inches of water to supplement
the 12 inches of winter rain and 4 square meters of local manure per acre.
The fields were prepared with tractors, but the cotton was planted and cul-
tivated by hand. The rows were standard, about 36 inches wide, and three seeds
were planted in the hills 12 inches apart. This is ample proof that cotton will
grow well and give high yields with good cultural practices.

The Foundation's work also illustrates the need for research in cultural
practices, irrigation, and especially fertilization. The soils generally need
nitrogen, phosphorus, and potassium, but demonstrations reveal that the soil
will react to certain of these plant foods but not to others. For instance, no
difference in yields has been noticed from the use of super-phosphates. More
research is needed, not only to determine optimum rates of application, but
also to determine whether the absorption rates can be increased by condition-
ing the soil.

GINNING

248 Prior to 1950 all the cotton gins were of the roller type, many of which
407 were manufactured locally. One modern American saw gin was installed in
1950 and proved so successful that 26 more, with 82 stands, have been put
into use since. Most of these are located in the Aleppo region. The new gins
are, for the most part, equipped with the most modern overhead cleaning units
and with standard gin presses. Buildings are unusually lavish. Investment
in the average four-stand gin is estimated at \$175,000 of which \$120,000 is in
the land and buildings. Even so, the cost of ginning is fairly moderate, about
\$9 per bale including bagging and ties.

About 1,700 roller gins are still in operation, three-fourths of them in
Aleppo and most of the others in Hama and Latakia with a capacity double
that of the saw gins.

The new saw gins still have a number of difficulties to overcome. The
opinion persists that saw gins do not give fibers as long as roller gins, cause

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Cotton bought in small lots from many farmers in various sections is thoroughly mixed in seed cotton storage bins in Aleppo, Syria, before ginning to get uniformity in the bale.

more neps, and often damage the fibers. Also, farmers have not been able to secure any higher price for their saw ginned cotton with less trash, but several dealers in Aleppo reported sales of saw ginned cotton at a premium, indicating that the market situation may be changing.

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Whereas formerly ginners took the seed to cover the cost of ginning, with the increased value of the seed, ginners now are required to operate on a service basis for a fixed charge.

MARKETING

The concentration of ginning equipment in a few large towns creates a difficult and expensive transportation problem for the farmers in remote areas. Because of the distance to the gins, many farmers are forced to sell cotton in the seed to merchants or middlemen in the local communities. Merchants gin the cotton for their own account and then dispose of the lint and the seed. Most of the gins are owned by merchants, but by no means do all merchants own gins.

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Aleppo is the cotton merchandising center, with 47 exporters operating in this market in 1951. About half a dozen merchants, of whom two or three do a small export business, operate in Damascus. More than half of all the exports are sold through the three leading firms; the others do a small volume of business largely as a sideline.

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